REMARKS

Applicant and the undersigned are most grateful for the time and effort accorded the instant application by the Examiner. The Office is respectfully requested to reconsider the rejections present in the outstanding Office Action in light of the following remarks.

In the outstanding Office Action, the Examiner indicated that the references provided in the Applicant's specification would be considered when submitted as a separate paper. It should be noted, Applicant filed an Information Disclosure Statement submitting copies of the references cited in the specification on July 28, 2005.

Claims 1-15 were pending in the instant application at the time of the outstanding Office Action. Of these claims, Claim 1 is an independent claim; the remaining claims are dependent claims. Claims 10-13 have been indicated as being allowed if rewritten in independent form. Claims 1-3, 5-8, and 14 have been amended. Applicants intend no change in the scope of the claims by the changes made by these amendments. It should also be noted these amendments are not in acquiescence of the Office's position on the allowability of the claims, but merely to expedite prosecution.

Claims 1-3, 6-9 and 14-15 stand rejected under 35 USC § 103(a) as being unpatentable over Nilson in view of Andrys; Claim 4 stands rejected under 35 USC § 103(a) as being unpatentable over Nilson in view of Andrys and in further view of Bickley et al.; and, Claim 5 stands rejected under 35 USC § 103(a) as being unpatentable

over Nilson in view of Andrys and in further view of Hageraats. Reconsideration and withdrawal of these rejections is respectfully requested.

As best understood, Nilson appears to be directed toward a very specific arrangement of transistors with "a pair of feedback circuits" to implement a single-ended to differential converter (active balun). Nilson's active balun appears to be of a two-stage design, i.e., a common-base input stage (M1 or M3) with a constant current source load (I1 or I3), followed by a conventional differential pair (M2 or M4). Feedback is taken from the sources of the M2-M4 pair to the gates of the common-base stage (M1 or M3).

This stands in contrast to the present invention. The present invention includes an active balun that, broadly speaking, is a single-stage differential pair with asymmetrical negative shunt feedback (Rfb1 in Figs. 1, 2, 4), which, also, uses a tuned R-L-C load to provide filtering of signals outside the frequency range of interest. Generally, the second order distortion products which might be generated by the active balun are reduced in amplitude by filtering in the tuned load. The present invention is also different because it operates at high frequencies where the gains from the input to the inverting and non-inverting outputs may be different and may vary in different ways with frequency; therefore, the balun has provisions for adjusting the loads on the inverting and non-inverting outputs to better equalize the gains through the two paths. The asymmetrical nature of the shunt feedback (Fig. 2) also helps to balance the inverting and non-inverting outputs in amplitude by reducing the amplitude of the inverting output more than the non-inverting output.

Presently, Claims 1-3, 5-8, and 14 have been rewritten to recite, *inter alia*, "asymmetrical negative shunt feedback," instead of "negative shunt feedback." Thus, it is respectfully submitted, Nilson clearly falls short of the present invention (as defined by the independent claims) in that, *inter alia*, it does not disclose an asymmetrical negative shunt feedback.

Moreover, the deficiencies of Nilson are not overcome by the other cited references. None of the references cited alone or in combination with one another teach or suggest an asymmetrical negative shunt feedback. As the Examiner is assuredly aware, to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 there must be a suggestion or motivation to modify a reference or combine references; a reasonable expectation of success in making the modification or combination; and the prior art must teach or suggest all the claim limitations. *See In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The prior art fails to establish obviousness, because, *inter alia*, none of the cited references teach or suggest all of the presently claimed limitations; therefore, the claims as presently amended stand in condition for immediate allowance.

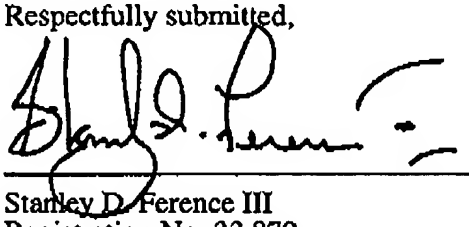
The "prior art made of record" has been reviewed. Applicant acknowledge that such prior art was not deemed by the Office to be sufficiently relevant as to have been applied against the claims of the instant application. To the extent that the Office may apply such prior art against the claims in the future, Applicant will be fully prepared to respond thereto.

In view of the foregoing, it is respectfully submitted that independent Claim 1 fully distinguishes over the applied art and is thus allowable. By virtue of dependence

from Claim 1, it is also submitted that the remaining dependent Claims are also allowable at this juncture. Applicant acknowledges that Claims 10-13 were indicated by the Examiner as being allowable if rewritten in independent form. Applicant reserves the right to file new claims of such scope at a later date that would still, at that point, presumably be allowable.

In summary, it is respectfully submitted that the instant application, including Claims 1-15, is presently in condition for allowance. Notice to the effect is hereby earnestly solicited. If there are any further issues in this application, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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